Abstract

X-ray tubes (11/12) for high dose rates, a corresponding method for generating high dose rates with X-ray tubes (11/12) as well as a method for producing corresponding X-ray devices (11/12), in which an anode (31/32) and a cathode (21/22) are disposed opposite each other in a vacuumized internal chamber (41/42), electrons e- being accelerated to the anode (31/32) by means of impressible high voltage. The anode (31/32) is made of a layer or coating of a metal having a high atomic number, for conversion of the electrons (e^-) into X-ray radiation (γ) with cooling. The cathode (21/22) comprises a substrate substantially transparent for X-ray radiation (γ) and an electron emitter layer likewise substantially transparent for X-ray radiation (γ). In particular, the cathode (31/32) can close off the vacuumized internal chamber (41/42) toward the outside.

(Figure 2)

List of Reference Numerals

10,...,12	X-ray tubes
20,...,22	cathode (electron emitter)
30,...,32	anode
301	emission window
40,...,42	vacuumized internal chamber
50/52	metal housing
62	insulator
72	emitter
e^-	electron beams
γ	gamma rays (X rays)